

Water beetles of Macao (Coleoptera)

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Abstract

The water beetles known from Macao so far are listed. Records of 25 species are listed of which 23 are considered new records for the territory of Macao. *Copelatus subfasciatus* ZIMMERMANN, *Leiodytes nicobaricus* REDTENBACHER, and *Amphips globus* ERICHSON are recorded for the first time from China.

Key words: Coleoptera, water beetles, China, Macao.

Introduction

Macao [Mandarin: Aomen, Cantonese: O mun, Portuguese: Macau] is situated ca. 60 km south-west of Hong Kong on the southeastern coast of China surrounded by the South China sea and by the Chinese province of Guangdong. Its very small territory increased constantly in recent years owing to reclamation from the Pearl River [= Zhu Jiang] Delta. The total area was about 16 km² in 1989 (see SUN 1989) and increased to 21.45 km² by 1996 (see WONG & al. 1997).

Comprising Macao Peninsula and the two small islands of Taipa [= Mandarin: Dangzai, Cantonese: Tumzai (= place of puddles)] and Colôane [= Mandarin: Luhuan] Macao is presently acknowledged as a Portuguese overseas territory. However, a declaration was signed by the Chinese and Portuguese Governments on April 13, 1987, stating that Portugal would restore Macao to the People's Republic of China on December 20, 1999 when it will become a Special Administrative Region (SAR) like Hong Kong and like Zhuhai (close to Macao).

JÄCH & JI (1995: p. 6) stated that "so far, no water beetles have been recorded from Macao". This statement proved to be incorrect. In fact, 2 species, *Cybister tripunctatus* OLIVIER and *Eretes sticticus* (L.), had been recorded from Macao before 1995 by EASTON (1991, 1992, 1993), and numerous specimens of water beetles were collected recently by the junior author in Macao. These species are listed below.

Material

All specimens listed below are deposited in the Natural History Museum, Vienna and University of Macao.

Species list

Noteridae

Canthydrus sp.

3 exs.: Colôane Island, Siac Pai Van, pond near rock quarry, 21.X.1997, leg. Easton (Fig. 7).

Dytiscidae

Copelatus sociennus BALFOUR-BROWNE

1 ex.: Colôane Island, Siac Pai Van, cement pot containing water for growth of Indian Lotus (*Nelumbo nucifera*), 19.III.1998, leg. Easton.

Copelatus subfasciatus ZIMMERMANN

1 ex.: Friendship Monument, at light, 31.V.1996, leg. Easton (Figs. 1 - 2).
First record for China.

Copelatus tenebrosus RÉGIMBART

1 ex.: Friendship Monument, at light, 30.V.1996, leg. Easton (Figs. 1 - 2).

Hydrovatus rufoniger (CLARK)

1 ex.: Friendship Monument, at light, 31.V.1996, leg. Easton (Figs. 1 - 2).

Hydrovatus subtilis SHARP

2 exs.: Taipa Island, mangrove, freshwater swamp, 7.V.1998, leg. Easton (Figs. 3 - 4).

Hyphydrus lyratus SWARTZ

1 ex.: Friendship Monument, at light, 2.V.1998, leg. Easton (Figs. 1 - 2).

1 ex.: pond along causeway between Colôane Island and Taipa Island (reclaimed area), 27.IX.1995, leg. Novo & Easton.

Hydroglyphus sp. (maybe new species)

5 exs.: Taipa Island, mangrove, freshwater swamp, 7.V.1998, leg. Easton (Figs. 3 - 4).

Leiodytes nicobaricus REDTENBACHER

6 exs.: Taipa Island, mangrove near Taipa Village, 21.X.1997, leg. Easton (Fig. 4).
First record for China.

Platynectes dissimilis SHARP

1 ex.: Taipa Island, cement cistern above garden pond on Big Taipa Hill, 30.IX.1997, leg. Easton (Fig. 5).

Rhantus suturalis (MACLEAY)

1 ex.: Friendship Monument, at light, 6.IV.1998, leg. Easton (Figs. 1 - 2).

1 ex.: Taipa Island, University Campus UMAC, at light, 30.III.1998, leg. Easton.

Laccophilus sp.

1 ex. (teneral female): Friendship Monument, at light, 30.V.1996, leg. Easton (Figs. 1 - 2).

Eretes sticticus (L.)

1 ex.: Friendship Monument, at light, 31.V.1996, leg. Easton (Figs. 1 - 2).

Hydaticus vittatus FABRICIUS

1 ex.: Friendship Monument, at light, 29.V.1994, leg. Easton (Figs. 1 - 2).

Cybister tripunctatus orientalis GSCHWENDTNER

ca. 20 exs.: Friendship Monument, at light, 1997, leg. Easton (Figs. 1 - 2).

Cybister ventralis SHARP

1 ex.: Friendship Monument, at light, 19.X.1997, leg. Easton (Figs. 1 - 2).

Gyrinidae

Orectochilus productus RÉGIMBART

1 ex.: Friendship Monument, at light, 21.V.1997, leg. Easton (Figs. 1 - 2).

Hydrophilidae

Enochrus sp.

1 ♀: Friendship Monument, at light, 2.V.1998, leg. Easton (Figs. 1 - 2).

***Sternolophus* sp.**

9 exs.: Friendship Monument, at light, 15.III.1997, 15.VI.1997, 2.V.1998, 31.V.1998, 2.X.1998, leg. Easton (Figs. 1 - 2).

1 ex.: pond along causeway between Colôane Island and Taipa Island (reclaimed area), 27.IX.1995, leg. Novo & Easton.

***Berosus incretus* d'ORCHYMONT**

3 exs.: Friendship Monument, at light, 30.V.1996, leg. Easton (Figs. 1 - 2).

***Hydrophilus* sp.**

3 exs.: Friendship Monument, at light, 31.V.1996, 7.IX.1997, leg. Easton (Figs. 1 - 2).

***Amphiops globus* ERICHSON**

4 exs.: Taipa Island, cement cistern above garden pond on granitic slope on Big Taipa Hill, 23.X.1997, leg. Easton (Fig. 5).

3 exs.: Taipa Island, island water reservoir on top of Big Taipa Hill, 30.IX.1997, leg. Easton (Fig. 6).

2 exs.: Colôane Island, Siac Pai Van, pond near rock quarry, 21.X.1997, leg. Easton (Fig. 7).

First record for China.

***Coelostoma* sp.**

4 ex.: Friendship Monument, at light, 2.V.1998, leg. Easton (Figs. 1 - 2).

Scirtidae

Scirtinae genus sp.

1 ex.: Macao Peninsula, Guia Hill, sump or drainage area, 31.X.1998, leg. Easton.

About 15 - 20 scirtid larvae, probably representing two genera (or at least two species), were collected by the junior author in a roadside ditch for drainage on Macao Peninsula on Guia Hill below lighthouse, 14.XI.1997, 18.X.1998 (Fig. 8). Larvae collected on 18.X.1998 were reared in the laboratory by the junior author and five adults (Scirtinae genus sp.) emerged on 28./29.X.1998.

Discussion

Most of the specimens found in Macao so far were collected at light, at the "Gateway of Understanding" (Sino-Portuguese Friendship Monument). It should be noted that specimens collected at light must not necessarily be breeding in Macao. They could have arrived from nearby Zhuhai (SAR) or Guangdong Province. Many water beetle species are known to be excellent flyers.

The larger water beetle species (*Hydrophilus* OLIVIER and *Cybister* CURTIS) play (or played) an important role in the cuisine of SE China. These beetles are eaten both as medicine and as confection, but primarily for the former purpose, being considered as an anti-diuretic. HOFFMANN (1947) reported that several species of *Hydrophilus* and *Cybister* were frequently sold in markets in Canton (Guangzhou), "*Hydrophilus* being cheaper than *Cybister*". Water beetles are still being sold (for human consumption) in Shenzhen (Guangdong Province). There are no water beetles offered for sale in Macao markets today, but people claim that they used to be consumed some years ago. *Cybister* specimens are nowadays sold in Hong Kong in pet shops for use in aquaria.

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Fig. 1: The Gateway of Understanding or Sino-Portuguese Friendship Monument at the entrance of the inner harbour between Macao Peninsula and Zhuhai, where many water beetles are attracted to high-intensity lights used to illuminate the 60 m high, black granitic sculpture.



Fig. 2: Three of the high intensity lights at the Friendship Monument with view of Zhuhai in the background. Area on the right is on Macao Peninsula.



Fig. 3: Overview of mangrove at shore of Taipa Island. Tree species largely composed of *Acanthus ilicifolius* and *Aegiceras corniculatum*. Pearl River Delta in background with Colôane Island on the left and Hengqin Island (Guangdong Province) on the right.



Fig. 4: Taipa Island, mangrove near Taipa Village, where freshwater from the island is mixing with saline water from the delta. Habitat of *Leiodytes nicobaricus*, *Hydroglyphus* sp. and *Hydrovatus subtilis*.



Fig. 5: Taipa Island, cement cistern above garden pond below hiking trail on granitic slope on Big Taipa Hill. Habitat of *Platynectes dissimilis* and *Amphiops globus*.



Fig. 6: Taipa Island, man made water impoundment or reservoir on top of Big Taipa Hill. Habitat of *Amphiops globus*.



Fig. 7: Colôane Island, Siac Pai Van, pond near rock quarry. Habitat of *Canthydrus* sp. and *Amphiops globus*. Aquatic plants include Lesser duckweed (*Lemna minor*) and Arrow-head plant (*Sagittaria sagittifolia*).



Fig. 8: Macau Peninsula, roadside ditch for drainage on Guia Hill, below the lighthouse, ca. 90 m a.s.l. Habitat of scirtid larvae.

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